

Procedure for managing risks associated with manual tasks involving whole-body vibration exposure

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1. Purpose

Some manual tasks, particularly driving, involve exposure to whole-body vibration. Long term exposure to high amplitude whole-body vibration is associated with adverse health effects, particularly back pain. This procedure describes a program for managing this hazard.

2. Scope

This procedure applies to all manual tasks which involve exposure to whole-body vibration. Tasks involving driving vehicles or equipment are the most common tasks in which this hazard is encountered.

3. Managing manual tasks risks

Not all manual tasks are hazardous. Managing manual tasks risks requires first identifying potentially harmful manual tasks.

When potentially harmful manual tasks have been identified, the degree and source of risk associated with the tasks must be assessed. This assessment must consider the direct risk factors of exertion, postures, and movements required to perform the task, and the duration of exposure; as well as other environmental characteristics.

If the manual tasks cannot practicably be eliminated, then design controls must be implemented to reduce the risk as far as reasonably practicable. Administrative controls may also be required to manage the residual risks.

Keeping records of the potentially harmful tasks identified, risk assessments, proposed controls, actions taken, and resulting residual risks, is required.

Successful management of manual tasks risk requires participation at all stages of the process by the people who perform the tasks. Training in manual task risk assessment and control is required to ensure this participation is successful.

3.1 Identify potentially harmful manual tasks.

Identification of potentially harmful manual tasks requires (i) consultation with employees; (ii) observation of manual tasks; and (iii) reviewing workplace records. A task should be considered as potentially harmful if any of the following apply:

- An injury has been recorded which was associated with performance of the task
- Any employee is physically incapable of performing the task, or the task can only be done for a short time before stopping
- The mass of any object, person, or animal being handled exceeds 16 kg
- If the force exerted on any object, person, or animal exceeds 200 N
- If the postures adopted to perform the task involve substantial deviations from neutral
- If the task involves static postures held for longer than 30 seconds and the task is performed for more than 30 minutes without a break, or for more than 2 hours per shift
- If the task involves repetitive movements of any body part and is performed for more than 30 minutes without a break, or for more than 2 hours per shift
- If the task is performed for longer than 60 min at a time without a break
- If the task is performed for longer than 4 hours per shift
- If exposure to whole body vibration (vehicles) or peripheral vibration (power tools) exceeds 2 hr per shift
- Any employee reports discomfort associated with the manual task
- Employees have improvised controls for the task
- Workers doing this task have a higher turnover, or rate of sick leave, than elsewhere in the organisation

This procedure applies to manual tasks which are considered potentially harmful because they involve exposure to whole-body vibration greater than 2 hours per shift.

Manual task hazard identification is a continuous process, and employees should be encouraged to report discomfort associated with manual tasks.

The potential for hazardous manual tasks shall also be considered whenever there is a proposed change in equipment or work processes.

If it is necessary to prioritise potentially harmful tasks for subsequent risk assessment, the following criteria are suggested:

1. Highest Priority for Assessment - An injury has been associated with the task; or another of the other criteria above applies, and the task is frequently performed by many people (eg., >20 people)
2. Medium Priority for Assessment - The task involves maximum exertion; some people cannot perform the task; discomfort has been reported associated with the task; or another of the other criteria above applies, and the task is regularly performed by multiple people (eg., >5 < 20).
3. Lower Priority for Assessment - One of the above criteria applies and the task is infrequently performed by few people (eg., <5)

3.2 Assess Risks

Where a potentially harmful manual tasks is identified, and the task cannot immediately be eliminated, the risk associated with the manual task shall be assessed. The risk assessment shall involve participation of persons who perform the task. The risk assessment shall be facilitated by a person with appropriate training.

Where the task is considered potentially harmful as a consequence of whole-body vibration exposure, the risk assessment shall be undertaken by either engaging a consultant to measure the vibration exposure, or through the use of the WBV iOS application and iPod Touch to measure the approximate vibration amplitude.

The amplitude of whole-body vibration associated with the task should be measured for a duration close to the shift duration. Where the task is associated with multiple vehicles, all vehicles should be measured. Simultaneous collection of additional information such as vehicle speed and road condition, as well as background information such as equipment age, maintenance history, operator mass, seat design and adjustment, will provide information which is useful for determining opportunities for implementing control strategies.

3.3 Eliminate or Control Risks

Where the whole-body vibration amplitude measured or estimated exceeds the lower limit of the health guidance caution zone specified in ISO2631.1 for r.m.s or VDV, action shall be taken to eliminate the task, or introduce design and/or administrative controls which reduce the exposure to below the health guidance caution zone.

The determination of design controls shall involve participation of persons who perform the task. The process of determining appropriate control measures shall be facilitated by a person with appropriate training.

3.3 Monitor and Review

Managing manual tasks risk is an iterative “continuous improvement” process. A risk assessment including estimation of measurement of whole-body vibration amplitude should be undertaken following implementation of any control measures to assess whether the controls are working as anticipated, and whether new risks have been introduced.

3.4 Record Keeping

Records shall be kept of potentially hazardous tasks identified, risk assessments undertaken (including vibration measurements), control measures suggested, control measures implemented, and the subsequent reassessment undertaken following the implementation of control measures. Ideally, these records should be kept in an easily accessible format to facilitate sharing across the organisation. A web-based database solution is available which is consistent with this procedure¹.

3.5 Training

Participation of persons who perform manual tasks is required at all stages of the risk management process. Training in manual task hazard identification, risk assessment, and control is required for all persons performing manual tasks. The training should incorporate information describing risks associated with whole-body vibration.

¹ ergoanalyst.com